"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

UDC 543.42:666.1/2

USSR

YEVSTROP'YEV, K. S., KRUPKIN, VU. S., GALIMOV, D. T., TARLAKOV, YU. P., SHEVYAKOV, A. M.

"On the Structural Features of R_2O - B_2O_2 - GeO_2 System Glasses from IR and EPR Spectroscopic Data"

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied Spectroscopy), Vol 13, No 4, Oct 70, pp 655-661

Abstract: A UR-10 spectrograph was used to take ir spectra in the range of 1600 to 400 cm^{-1}. The glass samples, made of chemically pure materials, were heated to 600C and pressed into potassium bromide. A Co^{60} gamma source of 10^4 r/hr was used to irradiate the samples for the EPR tests. The dose was 2 x 10^6 roentgens at room temperature. The spectra were recorded with an RE 1301 radiospectrometer at 300°K.

Ir spectra of sodium glass samples with varying content (10, 20, and 30 mole %) of alkali oxide and of lithium and potassium borogermanate glasses were taken. As the Na_2O content is increased,

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USSR

YEVSTROP'YEV, K. S., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 70, pp 655-661

the spectral curves become simpler and the principal absorption band of Ge - O - Ge at 900 cm^{-1} progressively shifts in the long wave direction. This behavior holds also for Li_2O, Na_2O, and K_2O.

Introduction of boric anhydride into the sample greatly alters the nature of the spectra of alkali germanate glasses. The principal absorption band shifts toward the higher frequencies. The band at 1100 cm^{-1} attributed to BO_4 tetrahedra, increases in intensity. The deformation vibration band at 600 to 400 cm^{-1} decreases gradually and in borate glasses degenerates. The effect of the boric anhydride is the same for sodium, lithium, and potassium glasses.

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USSR

YEVSTROP'YEV, K. S., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 70, pp 655-661

The shifting of the absorption bands and changes in intensity with variation in the composition and content of the glasses is related to changes in lattice structures in the samples.

Epr spectra excited by gamma radiation were taken for the same samples, and similar analyses and interpretations are made as for the ir spectra. Variation in the signals and their intensities as a function of the quantity of B_2O_3 correlates well with the results of the ir spectra.

It is concluded that there is a range of compositions of alkali borogermanate glasses in which part of the germanium exists in sixfold coordination (in the form of GeO_6 octahedra). The range expands as the concentration of the alkali oxide increases. For 10, 20, and 30 mole % of Na_2O, the limiting concentration of B_2O_3 is 10, 25, and 30 to 40 mole %. In potassium and lithium glasses the maximum is 30 to 40 mole % of B_2O_3.

Orig. article has 4 figures, 1 table, and 10 references.

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UDC 669.046.5

USSR

KRUPMAN, I. I., SOCHNEV, A. Ye., DETOCHKA, V. I., TELESOV, S. A., OFENGENDEN, A. M., and NESTEROVICH, R. P.

"Steel Refining in Ladle by Self-Fluxing (Exothermic) Slag Mixtures"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys). Izd-vo "Metallurgiya," No 61, 1970, pp 244-246

Translation of abstract: Results are presented of an investigation of the burning rate of self-fluxing mixtures as a function of their thermal state and humidity of the lime used. A procedure is described for preliminary melting of such mixtures with liquid refining of slag in a ladle before casting. Data are presented on experimental heats with refining by self-fluxing mixtures for preliminary melting in a 140-ton ladle. Advantages in using such mixtures are as follows: the degree of desulfurization obtained with the addition of a 3% mixture is on the average 52%; the steel contamination with nonmetallic impurities is reduced; and its plastic properties are improved. 2 tables.

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UR 0482

AN0040707 Krupman, L. I.

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

235786 REFINED MOLTEN SLAG is ignited by a cartridge containing aluminium and magnesium together with nitre and ferrous oxides, in conjunction with a ni-chrome filament coil at the base which contacts the most flammable part of the slag mix. These cartridges are placed at the base of the ladle, and their ends led out for firing electrically at the correct moment. The cartridge ignites and with it the entire exothermic mix in the ladle. 100-150 kg mix burns in 5-8 minutes and gives refined slag at 1350-1450°C. Combustion products are exhausted clear of the shop. 23.11.66. as 1115027/22-2. KRUPMAN, L.I et al. Donetsk Ferrous Metals Inst. (13.6.69.) Bul.6/24.1.69. Class 18b. Int.Cl. C21c.

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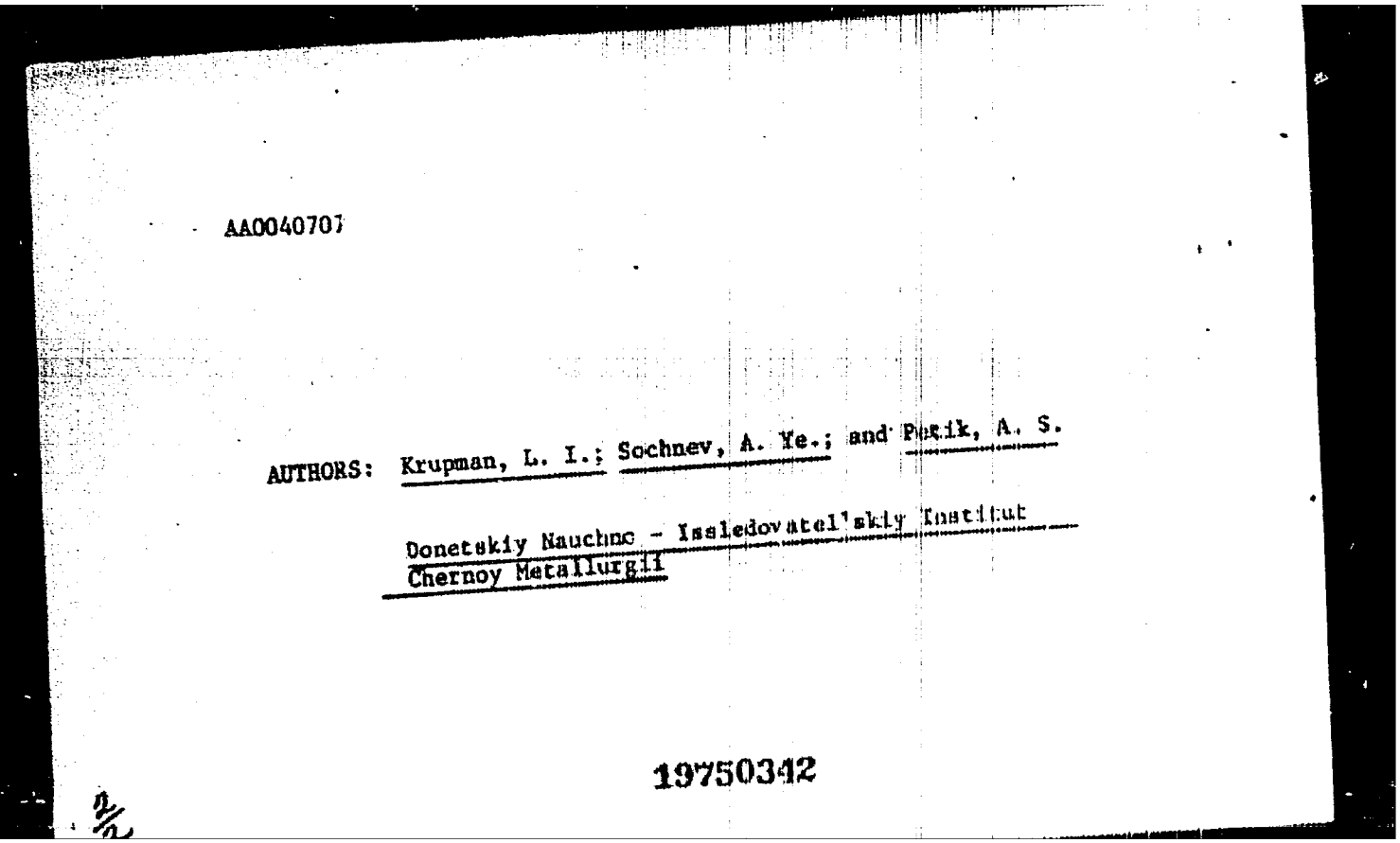

AA0040707

AUTHORS: Krupman, L. I.; Sochnev, A. Ye.; and Potik, A. S.

Donetskiy Nauchno - Issledovatel'skiy Institut Chernoy Metallurgii

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 014

TITLE--FERROELECTRICS WITH ORIENTATIONAL MOBILITY OF AMMONIUM GROUPS IN PRIMEI NH SUB4 BX SUB4 TYPE COMPOUNDS -U-

AUTHOR-(03)-ALEKSANDROVA, I.P., ALEKSANDROV, K.S., KRUPNAYA, V.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1024-9

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SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--AMMONIUM COMPOUND, FERROELECTRICITY, PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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ACCESSION NO--AP0126121

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126121

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORIENTATION MOBILITY OF THE POLAR GROUPS OF THE FERROELEC. NA NH SUB4 SEO SUB4 2H SUB2 O WAS INVESTIGATED IN A BROAD TEMP. INTERVAL AND THE POSITION OF THE PROTON PROTON VECTORS OF WATER MOLS. IN THE 2 PHASES WAS DETD. BY PMR. THE INVESTIGATED CRYSTAL, AS WELL AS AMMONIUM SULFATE AND FLUOROBERYLLATE, IS A FERROELEC. WITH A HIGH ORIENTATION MOBILITY OF AMMONIUM GROUPS BELOW THE CURIE POINT. THE POSSIBILITY WAS CONSIDERED OF THE EXISTENCE OF A TIME AVERAGED CONST. DIPOLE MOMENT OF THE DISTORTED AMMONIUM GROUP WHICH RECRIENTS RELATIVE TO LARGER THAN 1 SYMMETRY AXES. THE POLAR WATER MOLS. DO NOT CONTRIBUTE TO POLARIZATION. FACILITY: INST. FIZ., KRASNOYARSK, USSR.

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UDC: 533.95

USSR

KRUPNIK, L.I., DAMCHENKO, P.A. and SELEMIR, V.D.

"Interaction of Plasma Flow With Metal Surface"

Moscow, 2-y Vses. Simpoz. po Vzaimodeystviyu Atom. Chastits s Tverdym Telom (Second All-Union Simposium on Interaction of Atomic Particles With Solid Bodies), 1972, pp 224-227 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B102 by B.A. Chesnokov)

Translation: The experimental setup and test results of investigation of hydrogen plasma parameters before and after interaction with the metal surface are described. Plasma density is $2.3 \times 10^{14} - 1.9 \times 10^{}$ cm^{-3}, electronic temperature 6-8 ev, velocity (3 ÷ 8) × 10^6 cm/sec, degree of ionization 0.6, pressure in the interaction space $1 \times 10^{}$ mm Hg. An increase of density in the boundary layer by three times after the plasma hit the metal obstacle was observed. Neutrals, forming by the interaction of the charged particles with the atoms of the obstacle and by elastic and nonelastic collisions with the particles in the boundary layer, become plasma's main component. The installation diagram and the graphs of plasma component densities versus distance from obstacle are presented.

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UDC 517.43

USSR

GOKHBERG, I. Ts. (Corresponding Member, Moldavian SSR) and KRUPNIK, N. Ya.

"Singular Integral Operators on a Complex Contour"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 64, No. 1, October 1971, pp 21-24

Abstract: This article establishes the necessary and sufficient condition that an operator of the form

$$(A\varphi)(t) = c(t)\varphi(t) + d(t)(S\varphi)(t) \qquad (1)$$

be a Φ operator. In the above relationship, $(S\varphi)(t)$ is an operator of the singular integration

$$\frac{1}{\pi i}\int_{\Gamma}\frac{\varphi(\tau)}{\tau - t}\,d\tau, \quad t \in \Gamma,$$

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GOKHBERG, I. Ts., et al, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 64, No. 1, October 1971, pp 21-24

and a linear bounded operator in $L_p(\Gamma,\rho)$. Here, Γ is the contour, an oriented curve in the complex plane, consisting of a finite number of closed and open, piece-wise Lyapunov lines; $L_p(\Gamma,\rho)$ is the space L_p $(1<p<\infty)$ in Γ; c(t) and d(t) are piecewise continuous matrix functions of the m-th order in Γ, which has a finite number of intersections. A formula is developed for the index of the A operator in equation (1) above, and the symbol for the operator is chosen. This paper generalizes the results already obtained for the case in which Γ has no points of self-intersection.

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USSR

KRUPNIKOV, K. K., KUROPATENKO, V. F., SAPOZHNIKOV, A. T., SIMANOV, B. N., and SIMONENKO, V. A.

"Calculation of Explosions in Media With Polymorphic Phase Transitions"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 309-301

Abstract: The problem of describing the polymorphic phase transitions which occur during strong explosions in dense media can be completely solved in the simplest approximation of thermodynamic equilibrium. The authors limit themselves to the consideration of a strong explosion in a medium having only two modifications. The equation of state of each phase is taken in the form

$$P = P_x(\rho) + P_T, \quad E = E_x(\rho) + E_T,$$
$$P_x = \frac{\rho_0 c_0^2}{n}(\delta^n - 1),$$
$$P_T = \Gamma c_v \rho T, \qquad (1)$$

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KRUPNIKOV, K. K., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 300-301

$$E_x = \frac{c_0^2}{n}\left[\frac{\delta^{n-1}-n}{n-1} + \frac{1}{\delta}\right] + E_0,$$
$$E_T = c_V T,$$

where $\delta = \rho/\rho_0$, c_V = const, E_0 = const, Γ = const. The constants entering into the equation of state are obtained either from theoretical models or from experiments. The boundaries of the phase stability regions are determined from the equality of chemical potentials. The pressure and internal energy in each phase in the continuous flow regions are found from the system of equations

$$dE + P\,dV = 0,$$
$$P = P_x(\rho) + \Gamma\rho(E - E_x).$$

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KRUPNIKOV, K. K., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 300-301

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$$E - E_* = [T\,dP(T)/dT - P(T)](V - V_*).$$

On the boundaries of the phase mixture region isentropes and shock adiabats experience a sharp bend, which in a number of cases results in the appearance of rarefaction shock waves and the bifurcation of compression shock waves. All these peculiarities were considered in the RAND [Calculation of Adiabatic Nonstationary Motions] program for the computer-aided calculation of an explosion in a medium resembling quartz with the transition to stishovite:

$$\rho_{01}/\rho_{02} = 0{,}605,\quad c_{01}/c_{02} = 0{,}443,\quad c_{T1}/c_{T2} = 1,$$
$$n_1 = 4,\quad n_2 = 2{,}7,\quad \Gamma_1 = \Gamma_2 = 0{,}55.$$

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KRUPNIKOV, K. K., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 300-301

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UDC 542.91:547.1'118

USSR

VIZEL', A. O., KRUPNIY, V. K., and ARBUZOV, B. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Academy of Sciences

"1-Chlorophospholines with Trivalent Phosphorus"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, p 181

Abstract: The P-chlorides of phospholene with trivalent phosphorus are quite reactive substances which offer new possibilities in the chemistry of organophorus, five-membered heterocycles.

The authors were able to secure an effective transformation of 1-thioxo--1-chlorophospholene into a series of three 1-chlorophospholines. Analytical for these are given.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 538.56:543.5

KRUPNOV, A. F., Scientific Research Institute of Radio Physics Associated with Gor'kiy University

"Millimeter and Submillimeter Radio Spectroscopy (a Survey)"

Gor'kiy, IVUZ, Radiofizika, Vol 13, No 7, 1970, pp 961-100

Abstract: The author reviews the development of millimeter and submillimeter radio spectroscopy of gases over the last ten years. As in most of the works dealing with this subject, the present paper takes the wavelength range from about 10 mm to about 0.1 mm as the millimeter and submillimeter bands. No consideration is given to such independent branches of radio spectroscopy as research on atmospheric absorption or radio astronomic investigation of discrete lines. The first section of the article takes up radio spectroscopic singularities of the millimeter and submillimeter ranges, both those associated with the gas spectra themselves and those associated with the design of experimental installations. In the second section, the methods of millimeter and submillimeter radio spectroscopy are examined including gas, high-resolution and laser radio spectroscopy. In this connection, the article concentrates on the singularities of this spectral region which are most pronounced in the short-wave

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USSR

KRUPNOV, A. F., IVUZ, Radiofizika, Vol 13, No 7, 1970, pp 961-100

section. The third section of the article is devoted to radio equipment for millimeter and submillimeter radio spectroscopy. The principal topics dealt with in this section are sources of emission, frequency multipliers, frequency stabilizers, radiation receivers and registration devices. The last section deals with the possibilities for future developments in the use of this region of the electromagnetic frequency spectrum. The bibliography contains 247 titles, including some surveys with bibliographies of works on this field written up to 1965.

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USSR

UDC: 538.[illegible]:543.42

KRUPNOV, A. F., GERSHTEYN, L. I., SHUSTROV, V. C., and SELOV, S. P.

"Millimeter and Submillimeter Radio Spectroscope with Acoustical Indication"

Gor'kiy, Izvestiya VUZ -- Radiofizika, Vol. 23, No. 9, pp 1403-1405

Abstract: As far as the authors know, the device they propose is the first of its kind to use the principle of acoustic sensing in radio spectroscopy -- i.e., in investigating the microwave absorption spectrum of a gas filling the sensor cell. The authors designed and tested their spectroscope, basically following the design proposed by M. Golay (Rev. Sci. Instr. 18, 1947, p 357), in the wavelength range of 0.5 to 2.4 mm. This brief communication gives the preliminary results of those tests and considers some of the advantages of acoustical sending. A block diagram of the system is shown. The cell has a side wall which is a membrane forming one plate of a condenser microphone. The power absorbed heats the gas, which expands and bends the membrane, thus setting

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up a signal which is amplified. The constant component of the pressure on the membrane is eliminated by mechanical decoupling, and the spectral lines are observed on an oscilloscope. In the tests, a backward wave tube was used as the radiation source. It was found that the sensitivity of this device exceeds that of the best centimeter wavelength radio spectroscopes, at least in theory. The authors admit, however, that their prototype's sensitivity was less than the limiting 10^{-6} watts as a consequence, primarily, of the poor construction of the microphone, which was insensitive and subject to vibration. They express their gratitude to Ye. N. Karyakin and N. K. Sem'yanskiy for their help in setting up the equipment, and to Yu. A. Dryagin, A. I. Naumov, and L. I. Fedoseyev for their valuable comments and their contribution of the backward wave tube, and finally to A. V. Gaponov for his comments on the manuscript.

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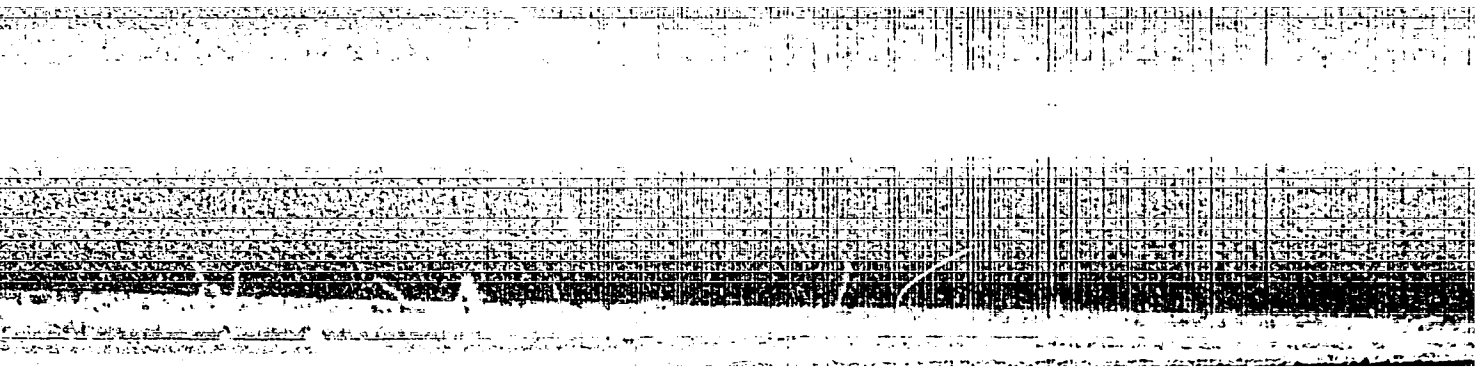

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and a linear bounded operator in $L_2(\Gamma,\rho)$. Here, Γ is the contour, an arbitrary curve in the complex plane, which contains a finite number of closed and open, piecewise-smooth curves, $L_\rho(\Gamma,\rho)$ is the space [illegible] with piecewise continuous weight function ρ of the arc length on Γ, which has a finite number of discontinuities. A formula is derived for the index of the λ operator in equation (1) above, and the proof for the operator L_ρ above. [illegible] results already obtained for the case in which Γ has no [illegible] self-intersection.

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$$dE + P\,dV = 0,$$
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KRUPNOV, A. F., Scientific Research Institute of Radio Physics Associated with Gor'kiy University

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USSR

KRUPNOV, A. F., IVUZ, Radiofizika, Vol 13, No 7, 1970, pp 961-100

section. The third section of the article is devoted to radio equipment for millimeter and submillimeter radio spectroscopy. The principal topics dealt with in this section are sources of emission, frequency multipliers, frequency stabilizers, radiation receivers and registration devices. The last section deals with the possibilities for future developments in the use of this region of the electromagnetic frequency spectrum. The bibliography contains 247 titles, including some surveys with bibliographies of works on this field written up to 1965.

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USSR

UDC: 538.[illegible]:5[illegible].42

KRUPKOV, A. F., GERSHTEYN, L. I., KRUSTNOV, V. G., and SELOV, S. P.

"Millimeter and Submillimeter Radio Spectroscope with Acoustical Indication"

Gor'kiy, Izvestiya VUZ -- Radiofizika, Vol. 13, No. 9, pp 1403-1405

Abstract: As far as the authors know, the device they propose is the first of its kind to use the principle of acoustic sensing in radio spectroscopy -- i.e., in investigating the microwave absorption spectrum of a gas filling the sensor cell. The authors designed and tested their spectroscope, basically following the design proposed by M. Golay (Rev. Sci. Instr. 18, 1947, p 357), in the wavelength range of 0.5 to 2.4 mm. This brief communication gives the preliminary results of those tests and considers some of the advantages of acoustical sensing. A block diagram of the system is shown. The cell has a side wall which is a membrane forming one plate of a condenser microphone. The power absorbed heats the gas, which expands and bends the membrane, thus setting

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up a signal which is amplified. The constant component of the pressure on the membrane is eliminated by mechanical decoupling, and the spectral lines are observed on an oscilloscope. In the tests, a backward wave tube was used as the radiation source. It was found that the sensitivity of this device exceeds that of the best centimeter wavelength radio spectroscopes, at least in theory. The authors admit, however, that their prototype's sensivity was less than the limiting 10^{-6} watts as a consequence, primarily, of the poor construction of the microphone, which was insensitive and suoject to vibration. They express their gratitude to Ye. N. Karyakin and N. N. Sem'yanskiy for their help in setting up the equipment, and to Yu. A. Dryagin, A. I. Naumov, and L. I. Fedoseyev for their valuable comments and their contribution of the backward wave tube, and finally to A. V. Gaponov for his comments on the manuscript.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MICROWAVE SPECTROSCOPY OF FORMALDEHYDE -U-

AUTHOR-(04)-KRUPNOV, A.F., GERSHTEYN, L.I., SHUSTROV, V.G., POLYAKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 480-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MICROWAVE SPECTROSCOPY, FORMALDEHYDE, ROTATIONAL SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0802 STEP NO--UR/0051/70/028/003/0480/0486

CIRC ACCESSION NO--AP0119709

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0119709 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROTATIONAL SPECTRUM OF HCHO WAS STUDIED IN THE FREQUENCY RANGE 350-580 GHZ. FREQUENCIES OF 29 LINES WERE MEASURED CORRESPONDING TO THE TRANSITIONS I YIELDS I PLUS 1(I EQUALS 4 YIELDS 5, I EQUALS 5 YIELDS 6, I EQUALS 6 YIELDS 7, I EQUALS 7 YIELDS 8). ON THE BASIS OF THE EXPTL. RESULTS COR. VALUES OF CENTRIFUGAL CONSTS. WERE USED FOR CALCN. OF THEORETICAL SUB,MH SPECTRUM OF HCHO. THE CALCD. SPECTRUM AGREED WELL WITH THE EXPTL. ONE (ROOT MEAN SQUARE ERROR 3 TIMES 10 PRIME NEGATVIE6). ALSO MORE PRECISE ROTATIONAL CONSTS. B SUB0 (38835.369 PLUS OR MINUS 0.004 MHZ) AND C SUB0 (34003.282 PLUS OR MINUS 0.004 MHZ) WERE CALCD.

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USSR

UDC 633.11:632.93

KRUPNOV, V. A. and VORONINA, S. A., Institute of Southeastern Agriculture

"Susceptibility of Soft and Hard Wheats With Gene and Cytoplasmic Male Sterility to Loose Smut - Ustilago tritici (Pers.) Jens."

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk, No 11, 1972, pp 6-8

Abstract: Pot and field experiments were performed with the soft spring wheat variety Saratovskaya 29 and hard wheat variety Gordeiforme [illegible] with spores of the causative agent of loose smut to determine the susceptibility of the plants to the disease. The results showed that mutation of the fertility gene in the Saratovskaya 29 variety and transfer of the genome of this variety and that of Gordeiforme to the cytoplasm of Triticum timopheevi did not have any appreciable effect on their resistance to loose smut. In the offspring of plants with either gene or cytoplasmic male sterility, the incidence of infection was the same as in the fertile analogs.

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USSR

KATYS, G. P., ASRATYAN, A. A., and KRUPNOV, V. I.

"Device for Representing Information in Three Dimensions"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 33, 1972, p 115, Author's certificate No (11)357559

Abstract: The device contains a flat, semitransparent screen and an image source, the screen consisting of a series of flat liquid-crystal films with electrically controlled transparency. The films are connected to a switch which, in turn, is connected to the image source through a synchrogenerator.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., KRUPNOV, V. K., and VIZEL', A. O., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"A new Method for Synthesis of 1-Halo-1-thioxophospholenes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 73, pp 1176-1177

Abstract: A one stage synthetic method for 1-halo-1-thioxophospholene is described. Best results were obtained by using a 3:3:1 ratio of the diene: PX_3:P_2S_5. As a rule mixtures of phospholenes-2 and phospholenes-3 were obtained. Only in the reaction of 2,3-dimethylbutadiene-1,3 with PBr_3 and P_2S_5 a single product was obtained -- 1-bromo-1-thioxo-3,4-dimethylphospholene-3.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., KRUPNOV, V. K., and VIZEL', A. O., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Preparation of Acyl Bromides of Trivalent and Pentavalent Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1193-1194

Abstract: It is shown that acyl bromides of phosphoric acids can be synthesized by replacing chlorine with bromine in the corresponding acyl chlorides in the presence of phosphorus tribromide. PBr_3 can be used to obtain a wide range of acyl bromides of pentavalent and trivalent phosphorus acids. Optimum reaction temperature 170-190°.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 547.26'11

VIZEL', A. O., KRUPNOV, V. K., ARBUZOV, B. A., and FADEYEVA, L. M., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Production of 1-Halophospholenes With a Trivalent Phosphorous Atom and Syntheses Based on These Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2137-2143

Abstract: A simple, one stage synthesis of 1-halophospholenes with a trivalent phosphorus has been described based on the reaction of a conjugated diene hydrocarbon with phosphorus trihalide and white phosphorus, best results being obtained with the reagent ratio of 3:1:2. The products are very reactive compounds which could be used in synthesis of novel phospholene derivatives: ethers, thioethers, and amides with trivalent phosphorus; they also react easily with conjugated dienes via a 1-4 cycloaddition, yielding novel spirophosphonium salts. The cyclic phosphonates obtained undergo easily the Arbuzov and Perkov rearrangement reactions.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 542.91:661.718.1

ARBUZOV, B. A., KRUPNOV, V. K., and VIZEL', A. O., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Acyl Derivatives of Phosphorous Acid with Dienes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1327-1329

Abstract: Cyclic anhydrides -- derivatives of salicylphosphorous acid -- react with conjugated diene hydrocarbons and form phosphplene derivatives which contain no residue of salicylic acid.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 612.014.481

PARIBOK, V. P., and KRUPNOVA, F. G., Laboratory of Radiation Cytology, Institute of Cytology, Academy of Sciences USSR, Leningrad)

"The Effect of Fractional X-ray Irradiation of the Meristematic Cells"

Leningrad, Tsitologia, Vol 12, No 4, 1970, pp 525-533

Abstract: In order to study the effect of repeated irradiation on the meristematic cells of the bean, Vicia faba, hundreds of sprouts were prepared. A group of sprouts was studied for the meristematic chromosomal formations. The others were irradiated with 400 r and kept moist between blotters. Ninety minutes later, groups of sprouts were again irradiated with various doses and subjected to comparative studies.

The results show that the population of meristematic cells irradiated for the second time contains fewer damaged chromosomes than a similarly treated group without prior irradiation. It was observed that the first dose of irradiation damaged many chromosomes, but at the same time provoked cyclic alterations in the sensitivity of chromosomes to secondary irradiation. The meristematic chromosomes developed a prophylactic immunological reaction against the injurious agent (radiation).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ELASTIC CONSTANTS OF DIPHENYL -U-

AUTHOR-(03)-KRUPNYY, V.I., ALEKSANDROV, K.S., BELIKOVA, G.S.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA (USSR), VOL. 15, NO. 3, P. 589-90 (MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ULTRASONIC VELOCITY, ELASTICITY, POLYNUCLEAR HYDROCARBON, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605029/F04 STEP NO--UR/0070/70/015/003/0589/0590

CIRC ACCESSION NO--AP0141768

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0141768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPULSE ULTRASONIC METHOD IS USED TO MEASURE THE WAVE VELOCITIES IN APPROPRIATE DIRECTIONS IN DIPHENYL AND HENCE TO DERIVE THE 13 INDEPENDENT STIFFNESSES C SUBIJ AT NORMAL TEMPERATURE. INVERSION OF THE MATRIX OF THE C SUBIJ GIVES THE COMPLIANCES WHICH ARE ALSO TABULATED.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 669.71:669.855

KRUPOTKIN, YA. M.

"Effect of Cerium on the Properties of Conducting Aluminum"

V sb. Redkozemel'n. met. i splavy (Rare Earth Metals and Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 97-99 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41757)

Translation: A study was made of the effect of introducing elements which can appreciably increase the strength of Al for the least reduction in electrical conductivity (Fe, Ni, Co, Nb, Be, Ce). The Ce content (0.08%) in the alloy increases the strength almost without changing the electrical resistance. The corrosion resistance of the initial Al increases on introduction of Ce. 1 table.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 612.11/.12+612.275.1

KRUPPA, YE. S., Kirgiz Scientific Research Institute for the Protection of Motherhood and Infants

"The Morphological Blood Composition of Children During the First Two Years of Life Who Reside Permanently at High Altitudes in the Tyan-Shan Mountains (Naryn City)"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 10-13

Abstract: Infants from two months to two years old (960 of both sexes) were studied. The maximum concentration of hemoglobin was found in 2-month-old boys (71.93) and 5-month-old girls (72.33). It decreases to 67.60 and 66.32 for 7- and 18-month-old boys, and to 67.96 and 65.30 for 8- and 19-month-old girls, respectively. Significant individual variations in the amount of hemoglobin was observed during the first 2 years of life in all children. This is attributed to the unstable hemopoiesis at this age. The concentration of erythrocytes per 1 mm^3 of blood varied markedly during early childhood; it was 4,278,700 and 4,106,400 for 2-month-old boys and girls, respectively, then it decreased to 3,978m700 and 4,056,400 for 9- and 15-month-old boys and girls, respectively. The level of erythrocytes was almost identical (4,240,000 and 4,252,900) for both sexes at the age of 2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

KRUPPA, YE. S., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 10-13

years. The concentration of leukocytes varied from 5,000 to 17,700/mm3 of blood for both sexes during the first year of life. A presence of monocytopenia among both sexes was established during the first two years of life. The number of neutrophils was an average 33.87-39.38% for boys, and 34.11-41.01% for girls during the first year of life, with individual variations from 13 to 73% for both sexes. The number of lymphocytes was an average 50-70%, with individual variations from 42 to 80% for both sexes during the first year of life. Later their number decreased and the number of neutrophils increased. The average number of thrombocytes was 193,450-298,330 per mm3 of blood for boys, and 228,340 - 292,500 for girls during the first 2 years of life. The results obtained are compared with findings by other authors.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE FIRST RESULTS OF DEEP SEISMIC SOUNDING IN THE BAIKAL RIFT ZONE -U-

AUTHOR--KRYLOV, S.V., MISHENKIN, B.P., KRUPSKAYA, G.V., PETRIK, G.V., YANUSHEVICH, T.A.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA 1970, NR 1 (121) PP 84-91

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMIC SOUNDING, EARTH CRUST, SEISMIC WAVE, MOHOROVICIC DISCONTINUITY, ELASTIC WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1290 STEP NO--UR/0210/70/000/001/0084/0091

CIRC ACCESSION NO--AP0103172

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103172

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIRST RESULTS OF STUDY OF THE EARTH'S CRUST OF BAIKAL RIFT ZONE AND SOUTHERN END OF THE SIBERIAN PLATFORM, CARRIED OUT BY THE PUNCTATE SOUNDING METHOD USING THE WAVES OF DIFFERENT TYPES ARE LISTED IN THE PAPER. THE CHANGES OF SEISMIC DISCONTINUITIES RELIEF, INCLUDING THE MOHO AND ALSO ELASTIC WAVES VELOCITIES ALONG THE ROUTE OF STUDY ARE REPRESENTED IN THE SUMMARY SECTION OF THE EARTH'S CRUST. IT IS ESTABLISHED THAT THE MOHO DISCONTINUITY IN BAIKAL RIFT ZONE IS CHARACTERIZED BY DECREASED VALUES OF ELASTIC WAVES VELOCITIES. "THE ROOT" AND "ANTIROOT" ARE ABSENT IN THE RELIEF OF THE EARTH'S CRUST BASEMENT.

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USSR

ASHMAN, A. Ye., KRUPSKIY, A. A.

"Characteristic Properties of Magnetic Memory Elements as Functions of their Structure"

Moscow, Magnitnyye Elementy Pamyati, 1972, pp 10-19.

Abstract: The characteristic properties of magnetic memory elements were studied as functions of their structure, as applicable to the problem of storage and readout of information. Among these properties are the method of storage of information (magnetic parameter used to differentiate 1 and 0 states, as well as the range of permissible changes of the magnetic state of an information magnetic circuit), nature of difference of 1 and 0 signals, nature of reading. The structure also influences the quantitative parameters of the elements. The study was performed using elements with minimal structure, divided into three classes: those with modulation of the information flux, with controlling information flux, and with flux switching. The flux-switching elements are described most completely. It is demonstrated that the characteristic properties and parameters depend on the type of relationship between functionally separate magnetic circuits in the core of the element. For example,

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USSR

Ashman, A. Ye., Krupskiy, A. A., Moscow, Magnitnyye Elementy Pamyati, 1972, pp 10-19.

the possibility of producing 1 and 0 output signals of different polarity is determined by the relationship between the interrogation and working magnetic circuits, the possibility of nondestructive readout -- by the relationship between the interrogation and information magnetic circuits. The relationship between the information and working magnetic circuits determines the noise level of the element. A table is presented in which those properties are systematized according to the structural classification of elements.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 681.327.66

BORISOV, P. V., TREGUBOV, K. YA., KRUPSKIY, A. A.

"A Device for Readout of a Multivalued Response in an Associative Memory"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, pp 48-49, patent No 259962, filed 18 Dec 68

Abstract: This Author's Certificate introduces a device for readout of a multivalued response in an associative memory. The device contains a control unit, detector matrix, boundary registers connected to the coordinate windings of the matrix, and address encoders connected to the outputs of the boundary registers. As a distinguishing feature, the device incorporates an answer display unit which increases speed. This display unit is made in the form of a coincidence circuit which indicates "negative response", "positive single-valued response" and "multivalued response". The input is connected to the encoder, and the output is connected to the control unit.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

Acc. Nr: AP0049793 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0183

101698a Copolymerization of vinyl chloride with acrylic acid. Ruchinskii, S. P.; Zav'yalov, A. N.; Krutsov, Yu. K.; Krentsel, B. A. (USSR). *Khim. Volokna* 1970, (1), 75 (Russ). Vinyl chloride (I) and acrylic acid (II) were copolymd. in MeOH contg. some H_2O at atm. pressure and −10 to 5° with an initiating system comprising $(NH_4)_2S_2O_8$, Rongalit and Cu salts to give I-II copolymer (III), which was more concd. in II than the original monomer mixt., dyed well with basic dyes, had gluss transition temp. ~100°, was more sol. in org. solvents than pure I polymer (IV) and formed fibers from acetone and $HCONMe_2$ solns. Fibers of III having 10% and 27.2% II had lower tex, strength, and % elongation than IV fibers, but higher shrink resistance (except for III with 27.2% II heated in air at 130°).

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KRUSANOVA, N. I.

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28 SEP 71

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SOME BIOCHEMICAL FINDINGS ON PATIENTS WITH PRIMARY CANCER OF THE LIVER AS RELATED TO CHEMOTHERAPY -U-
AUTHOR--PASHINTSEVA, L.P., KRUSANOVA, N.I., ASSEKRITOVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970, PAGES 39-43
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CANCER, LIVER, BLOOD SERUM, CHEMOTHERAPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0725 STEP NO--UR/0248/70/025/002/0039/0043

CIRC ACCESSION NO--AP0102695

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0102695
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE PRESENT WORK WAS TO INVESTIGATE THE DYNAMICS OF SOME BIOCHEMICAL BLOOD SERUM INDICES OF PATIENTS WITH PRIMARY CANCER OF THE LIVER UNDER THE INFLUENCE OF CHEMOTHERAPY.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 539.67

ROZOVSKIY, M. I., POTURAYEV, V. N., KRUSH, I. I., and SHAKALOVA, O. I.

"On the Influence of Relaxation Characteristics on Deformation Properties of Metals"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 120-123

Abstract: The use of weakly singular integral operators for the description of mechanical relaxation of metals at high temperature is considered. The physical meaning of operator parameters taking into account behavioral features of polycrystal materials is elucidated. An integro-operating equation for average stresses in a sample with inhomogeneous structure is obtained. 1 table, 7 references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NEUTRON DIFFRACTION IN LIQUID SODIUM IN THE TEMPERATURE RANGE FROM THE MELTING POINT TO THE BOILING POINT -U-

AUTHOR-(03)-KRUSHCHEV, B.I., BOGOMOLOV, A.M., IGAMBERDIYEV, SH.KH.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZB. SSR. SER. FIZ. MAT. NAUK 1970, 14,1, 80-1

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NEUTRON DIFFRACTION, LIQUID METAL, SODIUM ALLOY, BOILING POINT, ALLOY MELTING POINT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1347 STEP NO--UR/0166/70/014/001/0080/0081

CIRC ACCESSION NO--AP0121840

UNCLASSIFIED

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2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121840

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM NEUTRON DIFFRACTION CURVES (WAVELENGTH OF NEUTRONS 1.09 ANGSTROM) AT 100, 300, 500, 700, AND 883DEGREES THE STRUCTURE OF MOLTEN NA WAS INVESTIGATED. THE COORDINATION NO. OF NA AT 100-500DEGREES IS CONST. AT 8.8; THE RADIUS OF THE 1ST COORDINATION SPHERE DECREASES FROM 3.85 ANGSTROM AT 100DEGREES TO 3.65-3.70 ANGSTROM AT 500DEGREES. FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

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USSR

KRUSHCHEVA, Ye. A., Deceased, TITOVA, M. I., and MASLOVA, T. M., Burn Center, Clinic-Diagnostic Laboratory, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"State of the Blood Coagulation System in Burn Sickness"

Moscow, Sovetskaya Meditsina, No 5, 1972, pp 110-114

Abstract: To study blood coagulation during burn sickness, the blood of 60 patients in varying stages of the illness was investigated. The toxemia phase was characterized by an isolated decline in fibrinolytic activity and a rise in coagulating fibrinogen B level. Normal activity of free heparin, prothrombin index and, in 50 percent of the cases, the Lorand fibrin stabilizing factor were noted. Patients in the septic-toxemic phase showed further depression of fibrinolysis and a higher quantity of fibrinogen B, again with normal levels of heparin, prothrombin index and blood fibrinase. The action in these phases may be considered a defense mechanism of the body to protect fibrinogen from the disintegration which all proteins are subject to in burn sickness. Six persons with thrombotic complications had hypercoagulation with a lowered level of fibrinolysis, raised level of coagulating fibrinogen B, lowering of heparin and activation of the fibrin stabilizing factor. Ten

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KRUSHCHEVA, Ye. A., et al., Sovetskaya Meditsina, No 5, 1972, pp 110-114

cases of burn exhaustion showed hypocoagulation with elevated levels of fibrinolysis, lowered fibrinogen, increased heparin and lessened blood fibrinase and prothrombin index. With convalescence, normalization of coagulation values occurs.

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UDC 620.178.162

USSR

KRUSHCHOV, M. M., and BABICHEV, M. A., Moscow

"Abrasive Durability and Physical Characteristics of a Material"

Moscow, Mashinovedeniye, No 2, Mar-Apr 71, pp 106-111

Abstract: This article compares the relative durability for a number of technically pure metals, alloys, and nonmetals, determined experimentally with their modulus of normal elasticity and for metals giving the characteristics of the basic physical properties and combinations of these characteristics.

Figures 1-8 depict graphically the relationship between relative durability and factors such as the modulus of elasticity for various materials, the parameter (θ^2.A), heat content, melting point, and activation energy.

As a result thereof the relative durability is given as a function of approximate regular physical parameters. Formulas are then proposed to express these functions.

Table 1 compares the relative durability for a number of materials under abrasive wear as well as the parameter (θ^2.A). In addition, Table 2 also lists and compares the thermodynamic properties of several metals.

The method used herein permits the relative durability to be determined for a number of materials and their theoretical strength to be approxi-

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KRUSHCHOV, N. M., and BABICHEV, M. A., Mashinovedeniye, No 2, Mar-Apr 71, pp 106-111

mately estimated.
The article contains eight figures, two tables, and five equations; eleven literature references are cited

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USSR

KRUSHEL', Ye. G.

"Probability Analysis of Distributed Systems"

Moscow, Nelineynyye i Optimal'nyye Sistemy, 1971, pp 36-43

Abstract: The problem of determination of the probability characteristics (moments) of random function at the output of a distributed system on the basis of known probability characteristics of input perturbations and distributions of parameters is stated. Systems are studied which are described by parabolic and hyperbolic equations, since these are the most typical cases encountered in the study of the dynamics of distributed objects.

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USSR

UDC 519.2:62-50

KRUSHEL', YE. G.

"Convergence of the Process of Adjusting the Coefficients of Distributed Monitoring"

Frunze, Identifik. i upr. v sistemakh s nepolnoy inform.-- Sbornik (Identification and Control in Systems Containing Incomplete Information), "Ilim", 1970, pp 53-61 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V256, by R. Liptser)

Translation: Suppose T_s is the value of the output coordinate of some object that admits of the representation

$$T_s = \sum_{j=1}^{m} \alpha_j q_j^{s-\tau_j}$$

where $q_j^{s-\tau_j}$ is the value of the signal of the j-th transducer at the time instant $(s - \tau_j)$, τ_j is the delay time that allows

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USSR

KRUSHEL', YE. G., Identifik. i upr. v sistemakh s nepolnoy inform.--Sbornik, 1970, pp 53-61,

for the time for shipping the material between the station of the j-th transducer and measurement station T_s, and α_j are unknown weighting factors. The value of the signal of the j-th transducer $q_j^{s-\tau_j}$ is distorted by interference, which is represented by a sequence of independent random variables with zero means and dispersions σ_j^2. The unknown weighting coefficients α_j are determined by use of the recursive equations

$$\alpha_j^{s+1}=\alpha_j^s-\gamma^s\left\{\left[\sum_{j=1}^{m}\alpha_j^s q_j^{s-\tau_j}-T_s\right]\left(q^{s-\tau_j}-\alpha_j^s w_{js}^2\right)\right\},$$

$$\gamma^s=0\left(\frac{1}{s}\right),\quad j=1,2,\ldots,m.$$

It is shown that as $s\to\infty$, the sequence $\alpha_{js}\to\alpha_j$, $j = 1, \ldots, m$, with a probability of unity, if $|T_s|\le k<\infty$.

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USSR UDC 519.21

KRUSHEL', Ye. G.

"Probability Analysis of Distributed Systems"

Nelineyn. i Optimal'n. Sistemy [Nonlinear and Optimal Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 36-43, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V142 by R. Liptser).

Translation: A method is suggested for calculating the mathematical expectation and correlation function of random signals at the output of systems with distributed parameters satisfying the equation

$$Lu(t, x) = f(t, x),$$

where L is a differential operator with partial derivatives, f(t, x) is the random perturbation, the probability characteristics of which are known. The method is based on representation of u(t, x) in the integral form

$$u(t, x) = \int_{t_0}^{t} \int_{0}^{l} G(t, x, \xi, \tau) f(\xi, \tau) \, d\xi \, d\tau,$$

where G(t, x, ξ, τ) is the Green function, and subsequent calculation of the first two moments of random function u(t, x).

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USSR UDC: 519:62-50

KRUSHEL', Ye. G.

"Probabilistic Analysis of Closed Systems Which Contain Objects With Distributed Parameters"

V sb. Issled. i optimiz. stokhastich. raspredelen. sistem (Investigation and Optimization of Stochastically Distributed Systems--collection of works), Frunze, "Ilim", 1971, pp 3-16 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V310)

Translation: The paper deals with the problem of finding the statistical characteristics of the output signals of systems of automatic stabilization which contain an object with distributed parameters. Equations are presented for the mathematical expectation and covariation matrix of the vector yield of the system. These equations are derived from the known matrices of Green's functions, from the weight functions of the regulator, and from the moments of random signals applied to the boundary of the object and distributed over its length. An approximate study is made of the change in quality of the stabilization process when the parameters of the weight functions deviate from the design values. Author's abstract.
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USSR

UDC 539.4:629.12

ANDREYEV, L. V., KRUSHEL'NITSKIY, I. N., PRIVARNIKOV, YU. K., and PROKOPALO, YE. F.

"The Influence of a Preliminary Dynamic Load Upon the Supporting Power of Cylindrical Shells"

Kiev, Prikladnaya Mekhanika, Vol 9, No 3, Mar 73, pp 110-113

Abstract: Results are presented of tests on aluminum cylindrical shells subjected to single and multiple loading by a brief impulse of external pressure and subsequent static loading. On the basis of comparison of the values of critical pressure for shells subjected to dynamic loading, and for those not subjected to it, it was found that preliminary dynamic loading, single as well as multiple, comprising 60-80% of the critical impulse, does not affect the static supporting power of shells, with various ratios of the radius to the thickness, subjected to subsequent static loading by radial and omnidirectional external pressure. 3 figures. 1 table. 2 references.

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USSR

UDC 539.3

KRUSHEVSKIY, A. YE.

"Solution of the Exact-Formulation Problem of the Equilibrium of a Plate"

V sb. 26 Nauchno-tekhn. konferentsiya. Belorussk. politekhn. in-t Materialy Sekts. teor. i prikl. mekhaniki (26th Scientific-Technical Conference, Belorussian Polytechnic Institute, Materials of the Theoretical and Applied Mechanics Section -- collection of works), Minsk, 1970, pp 51-57 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12V155, by A. G. Tsypkin)

Translation: The problem of the equilibrium of a plate is solved by the variational method. A plate arbitrarily loaded on its faces is examined under the following boundary value conditions: $z = h/2$: $\tau_{xz} = x^+$, $\tau_{yz} = y^+$, $\sigma_z = z^+$; $z = -h/2$: $\tau_{xz} = -x^-$, $\tau_{yz} = -y^-$, $\sigma_z = z^-$, where τ and σ = stresses. The components of the displacement vector are found as the sum of a quadratic trinomial in z with undetermined coefficients and a Fourier series with undetermined coefficients. The problem is solved by allowing for the bulk load vector and temperature effects. The system of elasticity theory equations is reduced to equations in partial derivatives with respect to three

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KRUSHEVSKIY, A. YE., V sb. 26 Nauchno-tekhn. konferentsiya. Belorussk. politekhn. in-t. Materialy Sekts. teor. i prikl mekhaniki, Minsk, 1970, pp 51-57

expansion coefficients appearing in the displacement. It is shown that all the remaining expansion functions are expressed in terms of these three functions. In the particular case, the problem of a circular plate loaded uniformly with a distributed load of intensity q on the face z = h/2 is examined. Formulas are derived for stresses and displacements (boundary value conditions at the cylindrical surface are assumed to be dependent only on the coordinates). The solution to the problem is given in series form. The unknown constants are found from the conditions of loading and rigid clamping of the cylindrical plate (when r = R and u = w = 0, where u and w are the first and third components of the displacement vector). The proposed method of determining the unknown coefficients leads to the solution of two or four algebraic equations.

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USSR

UDC 51:330:115

KRUSHEVSKIY, P. V.

"Optimization of Distribution of Capital Investments"

Mat. Metody Issled. I Optimiz. Sistem. Vyp. 3, [Mathematical Methods of Studying and Optimizing Systems, No. 3--Collection of Works], Kiev, 1970, pp 85-90, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V590).

No Abstract.

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USSR

UDC 591.51

KRUSHINSKIY, L. V., DASHEVSKIY, B. A., KRUSHINSKAYA, N. L., and DMITRIYEVA, I. L., Moscow State University imeni M. V. Lomonosov, Institute of the Biology of Development, Academy of Sciences USSR, Moscow

"Study of the Capacity of Tursiops truncatus (Montagu) Dolphins to Operate With the Empirical Dimension of Figures"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 755-758

Abstract: A brief survey of studies of the various capacities of dolphins for orientation and communication, including reasoning abilities, is presented, and experiments are described which were performed on two young adult females (Tursiops truncatus) which had been in captivity since 1958 and were quite tame. Both animals were highly interested in a game with a ball which frequently took precedence over their desire to eat, and therefore a procedure was developed which was constructed on the game activity of the dolphins. The experiments demonstrated clearly the ability of the animals to select a three-dimensional figure in which the ball could be placed over a two-dimensional figure. The study provides the basis for considering that dolphins can without preliminary training construct a behavior program the basis for which is the capacity to operate with the empirical dimensionality of figures.

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USSR

KRUSHINSKIY, L. V., et al., Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 755-758

From this it can be concluded that the dolphins have a well-developed elementary reasoning ability.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

KRUSHINSKAYA, N.L.

Biology

JPRS 5723

19 October 1971

A STUDY OF THE COMPLEX FORM OF BEHAVIOR OF DOLPHINS

[Article by [illegible] Krushinskiy, L.A. [illegible] Lomonosov State University [illegible] Institute of Developmental Physiology of the Academy of Sciences USSR, Moscow, [illegible] Zoologicheskiy Zhurnal, Russian, Vol 22, No 5, 1972, submitted 13 March 1971, pp 715-723]

Dolphins are, at present, the subject of diverse and numerous investigations. The behavior of the bottle-nosed dolphin attracts special attention. This interest is caused, first, by the fact that they possess an exceptionally developed brain. According to the series of indexes of the brain work[illegible] out by Portman /20/, the bottle-nosed dolphin stands in second place, after man. Second, dolphins, especially bottle-nosed dolphins, as works by Caldwell /13/, and Lilly /14/ show, are distinguished among mammals by their richness of sound signals many of which are communication signals. Possibly, judging by Bastian's experiments /16/, they have the capacity to examine these signals intelligently. Third, the complexity and diversity of social relationships, the extremely developed mutual assistance among members of their society, the play activity and the clearly pronounced capacity for imitation may serve as indirect arguments for the examination of dolphins as animals which are characterized by highly developed higher nervous activity.

Thus, the enumerated characteristics of bottle-nosed dolphins' behavior in combination with their highly organized brain, provide a basis for considering that the bottle-nosed dolphin may possess a developed intellect.

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UDC 591.51

KRUSHINSKAYA, N. L., Institute of Developmental Biology, Academy of Sciences USSR

"Memory"

Moscow, Priroda, No 9, 1970, pp 75-78

Abstract: A discussion is presented of short-and long-term memory and the brain structures involved in the memory process. Experiments were conducted using the nutcracker, a widely distributed European bird whose main food is cedar nuts, which it stores in many places during the summer and fall to feed its young the following spring. In a specially constructed open-air cage, 12 nutcrackers were observed as they hid nuts in moss or old tree stumps. Shortly thereafter, the hippocampal cortex was surgically removed from one group of birds and different portions of the brain from the other birds. Birds without a hippocampal cortex located only 18 of 143 stores, as compared to 49 of 54 for birds lacking a neostriatum and 104 of 134 for intact animals. It was also noted that nutcrackers have favorite hiding places to which they return again and again. Birds without the hippocampus remembered these places for several days and went back to them repeatedly, even after they were empty. If information about a "storage location" is registered several times, the bird can apparently remember it, but a single perception of a situation is quickly forgotten.

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UDC 591.513.5:576.13+612.821.3.019

KRUSHINSKIY, L. V., Moscow State University

"Comparative Physiological Studies on Complex Forms of Animal Behavior"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 3, May/Jun 73, pp 278-284

Abstract: An adaptive behavioral act is regarded by the author as rational if it is performed by an animal in a new situation as a result of operating on the basis of empirically established laws linking together external phenomena and objects. Two forms of behavior may involve the application of empirically established laws: capacity for extrapolation and evaluation of spatial relations between objects. Experiments were designed to measure the reasoning ability of animals of different taxa - dogs, reptiles, fish, birds, apes, etc. - according to the above criteria. The animals were found to vary considerably, with dolphins, apes, crows, and dogs ranking highest in the form of intelligence tested. The author concludes that reasoning ability apparently changed more drastically in the course of evolution of higher nervous activity than did any other type of behavior. Since the degree of development of reasoning ability is related to cephalization, such behavior can be regarded as aromorphosis - progressive change with increasingly complex morphological and physiological organization and development of new functions.
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KRUSHINSKIY, L. V., DASHEVSKIY, B. A., KRUSHINSKAYA, N. L., and DMITRIYEVA, I. L., Moscow State University imeni M. V. Lomonosov, Institute of the Biology of Development, Academy of Sciences USSR, Moscow

"Study of the Capacity of Tursiops truncatus (Montagu) Dolphins to Operate With the Empirical Dimension of Figures"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 755-758

Abstract: A brief survey of studies of the various capacities of dolphins for orientation and communication, including reasoning abilities, is presented, and experiments are described which were performed on two young adult females (Tursiops truncatus) which had been in captivity since 1958 and were quite tame. Both animals were highly interested in a game with a ball which frequently took precedence over their desire to eat, and therefore a procedure was developed which was constructed on the game activity of the dolphins. The experiments demonstrated clearly the ability of the animals to select a three-dimensional figure in which the ball could be placed over a two-dimensional figure. The study provides the basis for considering that dolphins can without preliminary training construct a behavior program the basis for which is the capacity to operate with the empirical dimensionality of figures. 1/2

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KRUSHINSKIY, L. V., et al., Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 755-758

From this it can be concluded that the dolphins have a well-developed elementary reasoning ability.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

KRUSHINSKIY, L.V.

Biology

JPRS 57293

19 October 1972

A STUDY OF THE COMPLEX FORM OF BEHAVIOR OF DOLPHINS

[USSR] (Author's name illegible)

[Article by L.V. Krushinskiy, D.A. Dashevskiy, [illegible] Moscow State University [illegible] Institute of Ecology of the Academy of Sciences USSR, Moscow, Zhurnal Obshchey Biologii, Russian, Vol 32, No 4, 1972, submitted 13 March [illegible] pp 718-725]

UDC 612.[illegible]

Dolphins are, at present, the subject of diverse and numerous investigations. The behavior of the bottle-nosed dolphin attracts special attention. This interest is caused, first, by the fact that they possess an exceptionally developed brain. According to the series of indexes of the brain worked out by Portman /20/, the bottle-nosed dolphin stands in second place, after man. Second, dolphins, especially bottle-nosed dolphins, as works by Caldwell /13/ and Lilly /24/ show, are distinguished among mammals by their richness of sound signals, many of which are communication signals. Possibly, judging by Bastian's experiments /16/, they have the capacity to exchange these signals intelligently. Third, the complexity and diversity of social relationships, the extremely developed friendly assistance among members of their society, the play activity of the clearly pronounced capacity for imitation may serve as indirect arguments for the examination of dolphins as animals which are characterized by highly developed higher nervous activity.

Thus, the enumerated characteristics of bottle-nosed dolphins' behavior in combination with their highly organized brain, provide a basis for considering that the bottle-nosed dolphin may possess a developed intellect.

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USSR

UDC 517.54

KRUSHKAL', S. L.

"Relationship of Variational Problems for Conformal and Quasiconformal Mappings"

Moscow, Sibirskiy Matematicheskiy Zhurnal, Academy of Sciences SSR, Siberian Department, Vol 12, No 5, Sep/Oct 71, pp 1067-1076

Abstract: Variational problems in the theory of single-sheet analytic functions and in the theory of quasiconformal mappings are studied in relation to each other. The form of solutions for certain extremal problems for conformal mappings of canonical domains is established for the case in which these solutions admit of quasiconformal extension and are extremal in the corresponding classes of the quasiconformal mappings. The following subject divisions are discussed: 1) quasiconformal extension of extremal functions of the class S and derivation of the fundamental theorem; 2) properties of extremal functions of the class $Q_\beta(g_0, q)$; 3) one boundary variation. Suppose that in the class S of functions $w = f(z)$ that are single-sheet analytic in the circle U_1: $|z| < 1$, normalized by the conditions $f(0) = 0$, $f'(0) = 1$, we consider the problem of finding the maximum of the real functional

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USSR

KRUSHKAL', S. L., Sibirskiy Matematicheskiy Zhurnal, Academy of Sciences SSR, Siberian Department, Vol 12, No 5, Sep/Oct 71, pp 1067-1076

$$I[f] = I[f(\zeta), f'(\zeta), \ldots, f^{(m)}(\zeta)]$$

for a fixed $\zeta \in U_1$ where $f^{(l)}(\zeta) = w_l = u_l + iv_l$ ($l = 0, 1, \ldots, m$); I is a continuously differentiable function of the variables u_l, v_l; and $\sum_{l=0}^{m} |\partial I/\partial f^{(l)}| > 0$. The set of extremal functions for which the maximum of the functional I[f] is attained is denoted by $\sum$. Obviously, $\sum \neq \emptyset$.

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USSR

SOKOLOV, G. P., [illegible], A. K., [illegible] D. K., [illegible], V. M., and [illegible], S. S., Institute of Organic Chemistry, Acad. Sci. USSR, Moscow

"Synthesis and Some Chemical Properties of Butenic Acid Chloroanhydrides"

Moscow, Zhurnal Obshchey Khimii, Vol 5, No 9, 1935, pp 1641-1645

Abstract: Butenic acid chloroanhydrides were synthesized by catalytic [illegible] of allyl dichloride over palladium on carbon and platinum black catalysts. The chloroanhydrides were converted to the corresponding esters with ethyl and isopropyl alcohols. The cyclic dimers were obtained by [illegible] chloroanhydrides in toluene. Reaction of cyclic dimers with [illegible] diketopiperazines and a polymeric amide which were generally insoluble in water. Dimers of the unsaturated chloroanhydrides possessed [illegible] activity of cyclic dimers, but showing lower activity. The chloroanhydrides exhibited high [illegible] activity, their action being [illegible] succinylchloride derivatives.

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USSR

UDC 678.84:678.643'42'5.028

KRUSTALEVA, YE. N., GOLUBKOV, G. YE., ZHINKIN, D. YA., SEMENOVA, YE. A., MARKOVA, N. V., and LUSHNIKOVA, M. N.

"A New Hardner Which Improves the Thermal Stability of Epoxy Resins"

Moscow, Plasticheskiye Massy, No 1, Jan 70, pp 12-14

Abstract: An investigation was made into the possibility of improving the physicomechanical and dielectric properties of epoxy resins in the high-temperature region by using hexamethylcyclotrisilazane $[(CH_3)_2SiNH]_3$ and polyorganosilazanes containing di- and trifunctional units of the general formula $(R_2SiNH)_n[R'Si(NH)_{1.5}]_n$ (R = CH_3, R' = CH_3, C_6H_5, n = 1, 3) as hardeners. Polymers based on ED-6 epoxy resin and MSN-7 resin (polymethylsilazane) were studied. The compositions were hardened at 120°C for 3 hours, and then additionally heat treated at 150-200°C for 24 hours. The resultant polymers have better thermal stability in the high temperature region than those in which endic anhydride is used as the hardner. The weight of the epoxy resin hardened by MSN-7 stabilizes after ten days at 250°C whereas the epoxy resin produced by using endic anhydride as a hardner is destroyed under the same conditions with a sharp increase in weight losses. Not only is the thermal stability of the new product improved,

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KHRUSTALEVA, YE. N., et al., Plasticheskiye Massy, No 1, Jan 70, pp 12-14

but its mechanical strength and dielectric properties as well. Of particular importance is additional heat treatment at 200°C, which increases the maximum tensile strength of the resin at 155°C from 38 kg/cm^2 (after heat treatment at 150°C) to 152 kg/cm^2, and reduces the relative longitudinal extension at fracture (155°C) from 4.5% (after heat treatment at 150°C) to 4.0%. The electrical strength of the new resin at 155°C is 9.8 x 10^{13} kW/mm as compared with 1.3 x 10^{13} kW/mm for resin hardened by endic anhydride. The corresponding figures for the dielectric dissipation factor at 50 Hz (155°C) are 0.002 and 0.085 respectively. The new resin also has a lower coefficient of linear expansion in both the vitreous and highly elastic states.

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KRUSTYN', A.O.

Radiation Biology

JPRS 55100
4 Feb 72

UDC 581.13:577.15/.057:629.78.048

EFFECT OF FLIGHT FACTORS ON THE FORMATION OF ANOMALOUS METABOLITES AND ACTIVITY OF ENZYMES IN PLANTS (Radiation biology)

[Article by B. A. Sharkovskiy, A. T. Miller, Yu. L. Shaydorov and A. O. Krustyn'; Moscow, Kosmicheskaya Biologiya i Meditsina, Vol 5, No 6, 1971, pp 36-42]

Oxidation processes play an important role in the development of primary radiation damage reactions. Peroxidase is among the typical oxidative enzymes. The activity of these enzymes is a sensitive index of radiation impairment of metabolism in plants (V. A. Kozlov and A. M. Kuzin; A. M. Kuzin; Siberia and Milan). The activation of oxidative enzymatic systems (peroxidase + polyphenol oxidase) in the tissues of irradiated plants leads to an accumulation of primary radicomins (A. M. Kuzin and N. P. Korolev). These include substances of phenol nature of the orthoquinone type and the oxidation products of unsaturated fatty acids intensifying the development of primary and initial radiation damage processes (A. M. Kuzin; Yu. B. Kudryashov; F. A. Sharkovskiy). Exposure to different factors (storage, washing, heating, hypoxia, mineral nutrition, protective substances) can substantially change the content of these substances in the body of irradiated animals and plants and thereby influence the biochemical effect of irradiation on them (Korenina, et al.; L. I. Deyev; A. M. Kuzin, et al.).

Accordingly, as criteria of the biological effect of ionizing radiation and specific factors we used the content of oxidation metabolites (radicomins) and the activity of redox enzymes in plant tissues.

Method

The experimental model and the method for cultivating the plants grown from seeds exposed aboard an artificial earth satellite are described in other articles in this number of the journal. The content of anomalous metabolites was determined in plants 7, 10, 20 and 30 days in age. The metabolites were extracted from the plant tissue over a period of 2 hours at room temperature using a quintuple (by weight) quantity of alcohol (purified in Al(OH)3) acidified to pH 3.3. The extract was filtered and the quantity

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

KRUSTYN', A. O.

SO: JPRS 55100
4 FEB 72

UDC 629.78.048:582.998.4.057

CHANGE IN GROWTH PROCESSES IN IRRADIATED LETTUCE SEEDS

[Article by Yu. I. Shavorov, A. S. Miller, [illegible], L. V. Alekse-
yenko, A. O. Krustyn', and V. N. Yakovlev, Moscow, Fiziologiya Rastenii,
Russian, Vol 5, No 6, 1971, submitted for publication 15 June
1971, pp 21-25]

Abstract: The effect of spaceflight factors on the biological effectiveness of X-rays was studied with respect to lettuce seeds. It was found that the flight exerted no significant effect on the energy of seed germination. The length of the primary root in flight specimens irradiated before flight was similar to that in the ground controls. According to this test, flight factors increased the effectiveness of ionizing irradiation insignificantly. The influence of a synchronous exposure inhibited the weight of 10-day plants to the greatest extent. The seed exposure to all the doses tested during the flight resulted in a slight decline of plant weight in comparison with the laboratory [illegible]

We studied the influence of flight factors and ionizing radiation on initial growth processes (germinating energy and germination of seeds, growth of the primary root, and also on the appearance of aberrations of the second phenotype in growing plants. The experimental plan provided for a clarification of the influence of flight factors on the appearance of a radiobiological effect (seed irradiation prior to flight) and the radiosensitivity of seeds irradiated after flight. As is well known, the ionization effect on dry seeds begins to appear with the onset of their germination. At that same time, both the realization of the damage and the depositely directed processes associated with a normalization of plant growth mechanisms. During the initial growth period the damaging effect of irradiation is most clearly manifested. With an increase in plant age recovery processes begin to predominate and in the case of small irradiation doses the radiation effect can be smoothed out.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

Acc. Nr. AP0048836 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR 0459

90905n Initiating action of some unsaturated peroxides during styrene polymerization in bulk. Puchin, V. A.; Pokhmurskaya, M. V.; Yurzhenko, T. I.; Krut, A. V. Tr. Lvov. Politekh. Inst., Lvov, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 245-51 (Russ). The initiating action of several unsatd. peresters during bulk polymn. of styrene was compared with that of their satd. analogs. Peresters studied were *tert*-Bu peracrylate (I), *tert*-Bu perpropionate (II), *tert*-Bu permethacrylate, *tert*-Bu perisobutyrate, *tert*-Bu percrotonate (III), and 2-(vinylethynyl)-2-propyl hydroperoxide (IV). The initiating action was detd. from the rate of polymn. of styrene dilatometers at initiator concn. 0.00565, 0.0281, and 0.0556 mole/l. and 70-90°. The d.p. varied linearly with time (at 20-3% conversion). The unsatd. peresters had greater initiating action than their satd. analogs. Thus, after 2 hr the conversion was 19.3% with I compared with 11.0% with II. The initiating action of IV was intermediate between that of I and III. The unsatd. peresters had lower activation energies (14.5-15 kcal/mole) than their satd. analogs (19.0-23.2 kcal/mole). The mol. wt. of the polystyrenes obtained was inversely proportional to the perester (both satd. and unsatd.) concn., apparently due to intensification of breaking of the growing polymer chains. The unsatd. peresters initiated polymn. of vinyl monomers at comparatively low temps. and gave branched polymers. IDBJR

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REEL/FRAME
19800603

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR UDC 621.643.66-987.004.1

KRUTASOVA, E. I., SPIRINA, L. S.

"Effect of Stress Concentrators Upon the Reliability of Steam Conduits Made of 15Kh1M1F Steel"

Chelyabinsk, V sb. "Osvoyeniye blokov moshchnost'yu 300 MVt na Ekibastuzsk. ugle" (Collection of Works - Assimilation of 300 w Power Units Burning the Ekibastuz-Region Coal), 1972, pp 198-208 (from Referativnyy Zhurnal-Teploenergetika, No 6, June 72, Abstract No 6 C76)

Abstract: The results of short and long-term tests of the strength and plastic properties of the 15Kh1M1F steel showed that said steel is sensitive to stress concentrators. The presence of a spiral cut lowers the level of lasting plasticity up to 3-4% at

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

KRUTASOVA, E.I., et al, Chelyabinsk, V. Sb. "Osvoyeniye blokov moshchnost'yu 300 MVt na Ekibastuzsk. ugle", 1972, pp 198-208

570°C, while the lasting strength by 25-40%. Steam conduits from said steel can be used reliably on units, after elimination of defects, acting as stress concentrators both in the base metal and in welded junctions. In order to get rid of brittle failure in the steam conduits metal during operation, it is necessary to change heat treatement conditions for pipes in order to increase the deformation capacity of 15Kh1M1F steel. 5 figures, 3 tables.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE OPERATION OF STEAM LINES MADE FROM 12MKH AND 15 KHM STEELS AT HIGH PRESSURE ELECTRIC POWER STATIONS AFTER A STANDARD SERVICE LIFE -U-

AUTHOR-(05)-ZLEPKO, V.F., MAZEL, R.YE., KRUTASOVA, YE.I., ZAKHAROVA, A.I., VORONOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOENERGETIKA, NO. 2, 1970, PP 55-58

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LOW ALLOY STEEL, ELECTRIC POWER PLANT, THERMOELECTRIC POWER PLANT, STEAM BOILER, STEAM TURBINE, STEEL PIPE, PIPE LINE, CHROMIUM STEEL, MOLYBDENUM STEEL, RESEARCH FACILITY, ALLOY DESIGNATION/(U)12MKH LOW ALLOY STEEL, (U)15KHM LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0355 STEP NO--UR/0096/70/000/002/0055/0056

CIRC ACCESSION NO--AP0117592

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117592

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON PROLONGED TESTS, CONDITIONS WERE ESTABLISHED UNDER WHICH STEAM LINES MADE FROM 12MXH AND 15KHM STEELS, WHICH HAD OPERATED 100,000 HOURS, COULD BE AUTHORIZED FOR FURTHER OPERATION. ONE TABLE, SEVEN ILLUSTRATIONS, BIBLIOGRAPHY CONTAINS THREE CITATIONS. FACILITY: ALL UNION INSTITUTE OF HEAT ENGINEERING AND THE EASTERN BRANCH OF THE ALL UNION INSTITUTE OF HEAT ENGINEERING.

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USSR

BALOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V., KRUTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of Theoretical and Experimental Physics of the State Committee for the Use of Atomic Energy

"Study of the Reaction $\pi^- p \rightarrow pX^-$ at a Momentum of 3.25 GeV/c With a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a proton in the reaction $\pi^- p \rightarrow pX^-$ for high transfer momentums using a track spectrometer with optical spark chambers in a magnetic field. They found the momentum of the primary π^- mesons to be 3.25 GeV/c, and they measured the differential cross section of the formation of the ρ^- meson in the range of angles $-1 \leq \cos \theta^* \leq -0.0005$, which was found to be equal to 28.2 ± 9.8 μbarn/sterad. Figure 1 shows the spectrum of the missing masses in this reaction for a momentum of the π^- meson of 3.25 GeV/c. Figure 2 shows the cross section of the creation of the ρ^- meson backwards in the reaction $\pi^- p \rightarrow p \rho^-$ as a function of the momentum of the π^- mesons. The article contains 2 figures and 5 bibliographic entries. 1/1

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/3 038 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PSYCHOLOGICAL AGING CHARACTERISTICS OF YOUTH -U-

AUTHOR--KRUTETSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--FBIS-FPD; CYBERNETICS IN THE USSR, 28 APRIL 1970, NR 0024-70 P
MOSCOW, SOVETSKAYA PEDAGOGIKA, NO 1, JAN 70, PP 87-99
DATE PUBLISHED----JAN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, BIOLOGIC AGING, PSYCHOLOGY, DIET, IONIZING RADIATION BIOLOGIC EFFECT, ELECTROMAGNETIC BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1339 STEP NO--UR/0745/70/000/001/0087/0099

CIRC ACCESSION NO--AP0131776

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/3 038 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131776

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXAMINATION IS MADE OF THE PSYCHOLOGICAL DIFFICULTIES ENCOUNTERED BY YOUNG PEOPLE IN THE TRANSITION FROM CHILDHOOD TO ADULTHOOD FROM THE POINT OF VIEW OF THE EDUCATOR. THE MANIFESTATIONS OF THIS TRANSITION, THE SUDDEN CHANGE FROM POLITE AND OBEDIENT BEHAVIOR TO SHARPLY CRITICAL AND OPINIONATED ATTITUDES UNNERVES INEXPERIENCED TEACHERS. IN ADDITION TO THE CHANGES THAT OCCUR IN HIS STUDIES, FROM THE LEARNING OF SIMPLE FACTS AND THEIR PRACTICAL RELATIONSHIPS TO THE SYSTEMATIC STUDY OF THE BASES OF SCIENCE, THERE ARE CHANGES IN HIS SOCIAL RELATIONSHIPS AS HE PROGRESSES FROM A YOUNG PIONEER TO A MEMBER OF THE KOMSOMOL. THERE ARE ALSO BIOLOGICAL CHANGES. A COMPARISON OF 12 YEAR OLDS OF TODAY WITH THOSE THIRTY YEARS AGO SHOWS THAT MODERN CHILDREN ARE BIGGER AND STRONGER, AND THAT THEY RIPEN SEXUALLY ONE AND A HALF TO TWO YEARS EARLIER THAN BEFORE. THREE POSSIBLE REASONS FOR THIS ACCELERATION IN THE PHYSICAL AND PSYCHOLOGICAL DEVELOPMENT OF CHILDREN ARE CITED: MODERN DIET IS BETTER IN QUALITY AND QUANTITY; ELECTROMAGNETIC AND IONIZING RADIATION IS FAR GREATER; THE PSYCHOLOGICAL DEVELOPMENT OF THE YOUNG IS QUICKENED BY THE MUCH GREATER VOLUME OF INFORMATIONAL FLOW. IT IS THE VIEW OF SOVIET PSYCHOLOGISTS THAT EDUCATION HAS A PROFOUND EFFECT ON THE DEVELOPMENT OF THE YOUNG, BUT THAT BIOLOGICAL AND PSYCHOLOGICAL CHANGES MUST ALSO BE TAKEN INTO ACCOUNT. THE CHARACTERISTIC CURVE OF YOUTHFUL DEVELOPMENT SHOWS A SMOOTH GRADUAL DEVELOPMENT UP TO 10.5 YEARS OF AGE, THEN A RAPID AND SHARP RISE, AND AGAIN A SMOOTH CHANGE TO THE AGE OF 15,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

3/3 038 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131776

ABSTRACT/EXTRACT--THE ADOLESCENT PERIOD IS ONE OF VIOLENT CHANGES: MAXIMUM GROWTH FOR GIRLS OCCURS AT 13; FOR BOYS IT IS ABOUT THE AGE OF 15. IT BEHOOVES TEACHERS, EDUCATORS, AND CLASS LEADERS TO UNDERSTAND THE SEXUAL RIPENING OF THESE CHILDREN AND ITS EFFECT ON PSYCHOLOGICAL CHARACTERISTICS. SINCE IT IS A KNOWN FACT THAT SEXUAL ATTRACTION MAY LEAD TO DISSOLUTENESS AND CYNICISM, CHILDREN MUST BE PROTECTED FROM IMPROPER BOOKS AND FILMS. AS FAR AS STUDIES ARE CONCERNED, THE TEACHER MUST AVOID ASSIGNMENTS AS PUNISHMENT; IF HE PERSISTS, HIS SUTDENTS WILL NO LONGER CONSIDER WORK A MATTER OF HONOR AND HEROISM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--"TELEMECHANIZATION ASSEMBLY" -U-

AUTHOR--KRUTENKO, V.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, MEKHANIZATISYA I AVTOMATIZATISIYA PROIZVODSTVA, NO. 1, 1970, PP 11-13
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--INDUSTRIAL FACILITY, FERRITE DIODE, AUTOMATIC CONTROL EQUIPMENT, REMOTE CONTROL SYSTEM, INFORMATION PROCESSING, FREQUENCY SELECTION, VOLTAGE AMPLIFIER, POWER AMPLIFIER, IACH6NE INDUSTRY/(U)NART67 REMOTE CONTROL MACHINE, (U)TN100 ASSEMBLY SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0239 STEP NO--UR/0118/70/000/001/0011/0013

CIRC ACCESSION NO--AP0100762
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

2/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100762

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TELEMECHANICAL APPARATUS PLANT IN THE CITY OF NAL'CHIK IS NOW MASS PRODUCING AN ASSEMBLY WHICH PROVIDES FOR UNIT CONSTUCTION OF MECHANICAL AND TELEMECHANICAL DEVICES FOR GENERAL INDUSTRY. KNOWN AS "SPECTRUM," THIS ASSEMBLY WAS DEVELOPED BY SEVERAL RESEARCH INSTITUTES OF THE MINISTRY OF INSTRUMENT MANUFACTURE, MEANS OF AUTOMATION, AND CONTROL SYSTEMS. THE MANUFACTURE OF THE ASSEMBLY WAS PROMPTED BY THE ABSENCE OF UNIFIED SYSTEMS OF THIS TYPE. "SPECTRUM" COMPRISES STANDARD SYSTEMS INCLUDING SUB BLOCKS, SUPPLY CLOCKS, BLOCK CHASSIS, AND RACKS. THE SUB BLOCKS ARE THE ELEMENTARY STRUCTURAL MODULES OF THE ASSEMBLY; THEY ARE CATEGORIZED AS POTENTIAL PULSE, FERRITE DIODE, AND FREQUENCY SUB BLOCKS. THE FIRST TYPE PERMITS BUILDING ANY AUTOMATIC AND REMOTE CONTROL INSTRUMENT FOR GENERAL INDUSTRY, CONTAINING AS IT DOES 38 LOGIC AND FUNCTIONAL SUB BLOCKS. THE BASIC TECHNICAL DATA OF POTENTIAL PULSE SUB BLOCKS ARE GIVEN. VARIOUS UNITS THAT GO INTO THE MAKING OF THE FERRITE DIODE SUB BLOCK ARE LISTED. THE FREQUENCY SUB BLOCKS CAN BE USED FOR CONSTRUCTING AUTOMATIC, REMOTE CONTROL, TRANSMITTERS, AND INFORMATION PROCESSORS, AND CONSIST OF OSCILLATORS, FREQUENCY SELECTORS, FREQUENCY SWITCHES, VOLTAGE AND POWER AMPLIFIERS. A TABLE IS GIVEN OF THE TECHNICAL CHARACTERISTICS OF THE STABILIZED AND UNSTABILIZED POWER SUPPLY BLOCKS IN "SPECTRUM," AND A PHOTOGRAPH OF ONE SUCH BLOCK IS SHOWN. ANOTHER PHOTOGRAPH SHOWS THE CONTROL SITE OF THE TM-100 "HIGHWAY" ("TRASSA") SYSTEM, WHICH IS ONE MODEL OF THE ASSEMBLY OF REMOTE CONTROL EQUIPMENT KNOWN AS THE "NART-67."

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UDC 621.314.634

USSR

TALIBI, M.A., KRUTENYUK, V.A., KRUTENYUK, YE. G.

"Respective Electrical Parameters Of Selenium Rectifier Elements Of Various Manufacture"

Tr. kafedry fiz. Mariysk. ped. in-ta (Works Of The Physics Faculty. Mariysk Pedagogical Institute), Yoshkar-Ola, 1970, pp 52-65 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B312)

Translation: A survey is made of various works in which various production processes for manufacture of selenium rectifier elements are considered. 4 tab. 54 ref. V.N.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR UDC 557:226+537:311:35]:[537+535

GELLER, I. Kh., KRUTENYUK, V. A., KRUTENYUK, Ye. G., TALIBI, M. A.

"The Role of Cadmium in the Formation of the Se-CdSe Rectifying Junction"

Tr. Kafedry fiz. Mariysk. ped. in-ta, [Works of the Physics Department of Mariysk Pedagogics Institute], Yoshkar-Ola, 1970, pp 74-87, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 943 by B. A. Osadin).

Translation: The influence of the thickness of Cd, its oxidation, and also the oxidation of the Bi layer on the rectifying properties of the p-n heterocontact of Se-rectifying elements with Cd and Bi-electrodes were studied. After electrical forming (transmission of a reverse current), as the thickness of the Cd layer was increased from 1.64 to 3.88 μ, a decrease in the reverse current was observed as a result of thickening of the area of the space charge, resulting from reactive diffusion between Cd and Se. It is shown that the presence of a CdO film on the Se side influences the electrophysical properties of the blocking layer both directly and as a result of a change in the nature of the spherulitic crystallization of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

GELLER, I. Kh., et al, Tr. Kafedry fiz. Marlysk. ped. in-ta, Yoshkar-Ola, 1970, pp 74-87

Se-rectifier elements. The CdO oxide film in Se elements is one cause of layer separation. Oxidation of the Bi surface on the side of the ohmic contact with the Se also changes the nature of spherulitic crystallization of Se. The presence of a reverse-connected rectifying BiO-Se layer with an Se-CdSe p-n junction significantly changes the static volt-ampere characteristic of the entire system. The acceptor impurity in the Se does not eliminate the anisotropy of the BiO-Se conductivity.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610020-7

USSR

UDC 537:226+537:511:33]:[537+535

GELLER, I. Kh., KRUTENYUK, V. A., KRUTENYUK, Ye. G., TALIBI, M. A.

"The Role of Cadmium in the Formation of the Se-CdSe Rectifying Junction"

Tr. Kafedry fiz. Mariysk. ped. in-ta, [Works of the Physics Department of Mariysk Pedagogics Institute], Yoshkar-Ola, 1970, pp 74-87, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 943 by B. A. Osadin).

Translation: The influence of the thickness of Cd, its oxidation, and also the oxidation of the Bi layer on the rectifying properties of the p-n heterocontact of Se-rectifying elements with Cd and Bi-electrodes were studied. After electrical forming (transmission of a reverse current), as the thickness of the Cd layer was increased from 1.64 to 3.88 μ, a decrease in the reverse current was observed as a result of thickening of the area of the space charge, resulting from reactive diffusion between Cd and Se. It is shown that the presence of a CdO film on the Se side influences the electrophysical properties of the blocking layer both directly and as a result of a change in the nature of the spherulitic crystallization of the

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